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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,008	01/05/2001	Jeffrey D. Birdsley	AMDA.469PA	4595
7590	12/09/2003		EXAMINER [REDACTED]	WILLE, DOUGLAS A
Crawford PLLC Suite 390 1270 Northland Drive St. Paul, MN 55120			ART UNIT [REDACTED]	PAPER NUMBER 2814

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/755,008	BIRDSLEY ET AL.
<b>Examiner</b>	<b>Art Unit</b>	
Douglas A Wille	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 03 October 2003.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 12-20 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 05 January 2001 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

13)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a)  The translation of the foreign language provisional application has been received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ .

4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_ .

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of claims 13 – 20 with traverse is acknowledged but since the restriction is proper it is made final.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12 – 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 12 and 13 refer to modulation being adapted to inhibit optical beam intrusion upon the integrated circuit. This is not understood. Does this mean that modulation prevents the optical beam from reaching the circuit or does this mean that the optical beam is of sufficiently short duration that the optical signal is not detected by the circuit. If the former, the device would not be functional. If the latter, it is noted that carriers created by optical means will still be available for electrical interaction with the circuit. The specification provides no clarification on this point. Correction or explanation is required.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paniccia et al. in view of Kikuchi.

7. With respect to claim 12, Paniccia et al. show (see Figure 4 and column 4 et seq.) a means for directing a mode locked laser beam on to a substrate 405 using a lens 411 and a means for obtaining a reflected optical signal from the substrate but do not specify that the substrate is SOI. Kikuchi shows a means for evaluating an SOI substrate using optical techniques (see cover Figure and column 2, line 51 et seq.). Since Kikuchi shows that optical techniques can be used to evaluate an SOI substrate, it would be obvious to use the Paniccia et al. technique for SOI substrates since both the SOI and the usual substrates contain circuits.

8. With respect to claim 13, Paniccia et al. show (see Figure 4 and column 4 et seq.) an optical beam arrangement 407, 409, 411 for directing a mode locked laser beam on to a substrate 405 and a detection arrangement 411, 409, 417 to detect a reflected optical signal from the substrate but do not specify that the substrate is SOI. Kikuchi shows a means for evaluating an SOI substrate using optical techniques (see cover Figure and column 2, line 51 et seq.). Since Kikuchi shows that optical techniques can be used to evaluate an SOI substrate, it would be obvious to use the Paniccia et al. technique for SOI substrates since both the SOI and the usual substrates contain circuits.

9. With respect to claim 14, the laser 407 is a mode locked laser operating at 1.06 microns (column 5, line 42).

10. With respect to claim 15, mode locked lasers generally produce pulses in the picosecond range but since criticality has not been established it would be obvious to use any pulse length needed for circuit analysis as a matter of design choice.

11. With respect to claim 16, Paniccia et al. show the use of a bias applied to the device (column 6, line 38) which inherently includes a testing device to operate the circuit element.
12. With respect to claims 17 and 18, it would be obvious to use a computer to process the detected signals and to provide a visual output.
13. With respect to claim 19 the use of a monitor or a printer are obvious visual output devices.
14. With respect to claim 20, it would be obvious to use any standard analysis technique on the output.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas A Wille whose telephone number is (703) 308-4949. The examiner can normally be reached on M-F (6:15-2:45).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Douglas A. Wille  
Primary Examiner